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with aversion by the farmers. But this latter is a Northern grass, not found at the South, while the Bur-grass is to be found only beyond the limits of New England; according to Dr. Lapham, from Wisconsin to Minnesota; and in the Middle and Southern States, according to other observers. The specimen sent to us by Mr. Nott is *C. echinatus* Muhlenburg (*Descriptio Uberior Graminum*, p. 51) and figured by Plunkenet (*Phytographia* tab. 92–3). It is described by Dr. Chapman in his "Flora of the Southern United States," p. 578; and another species, the *C. tribuloides*, which grows on the seashores of Delaware, Carolina, etc., known as the Cockspur or Bur-grass, is also familiar to farmers, and much dreaded. As much as we detest the Couch-grass of our northern farms, we are to rejoice in the absence of these spiny and thorny spiked and burred-grasses in our northern soils. In some sections where the land is light, the Couch-grass makes a nutritious fodder and hay, being freely eaten by horses and cows; but we suspect that these sagacious animals would not care to digest the flowers and seeds of the "Sand Burr," although the leaves and stems of *C. echinatus* appear tender and abundant, and we can easily understand that it is very annoying where it naturally grows. — J. L. RUSSELL.]

WOLFFIA IN BLOSSOM. — I have just found (August 28th, 1870) the *Wolffia Columbiana* Karsten, flowering abundantly in a pool at Sandwich, Ontario, on the Detroit River. I enclose specimens. I discovered this station for it more than a year ago; but hitherto have failed to find the flowers till now. Untold millions of these tiny plants covered the surface of the water hiding it completely, and lying *en masse*, at least three-quarters of an inch thick. We find it, also (though not fertile), some miles higher up the river, at Connor's Creek, Michigan, but nowhere else along the shores. Though Gray says "flowers and fruit not seen," it has, I think, been found once in flower in the Catskills. The delicate white flowers disappear soon after taking it from the water; but on placing some, next day, in my aquarium, the little plants at once "righted themselves," and the flowers almost instantly reappeared, expanding fresh as ever from the centre of the frond. Last year, in the same pool, it was quite abundant, growing with *Lemna minor* L., which was, however, largely in the majority. Now, I find the Wolffia has almost taken possession of the pool, driving out the Lemna, which is "few and far between," and of a sickly, degraded type. — HENRY GILLMAN, *Detroit, Michigan.*

ZOOLOGY.

ABDOMINAL SENSE-ORGANS IN A FLY. — While engaged in naming a collection of microscopic preparations of insects mounted on slides by Mr. T. W. Starr of Philadelphia, for the collection of Dr. T. D'Oremieulx of New York, my attention was drawn to a sense-organ situated on the female anal appendages of a species of Chrysopila, allied to *C. ornata*

(Say), a genus of flies allied closely to Leptis. The female appendages are rounded, somewhat spatulate, and of the usual form seen in other species of the genus. The appendage is covered with stiff coarse hairs, about fifty in number, arising from conspicuous, round, clear cells, while the whole surface, as seen under a Zentmayer's 4-10 (A eye-piece), is densely covered with minute short hairs. On the posterior edge of the *upper* side of each appendage is situated a single, large round sac, with the edge quite regular. Its diameter is equal to a third of the length of the appendage on which it is situated. Dense fine hairs, like those covering the appendage, project inwards from its edge. The bottom of this shallow pit is a clear transparent membrane not bearing any hairs. There are no special sense-organs on the antennæ of the same insect.

With these organs, which I suppose to be olfactory in their function, may be compared a very similar single sac situated on the *under* side of the end of the labial and maxillary palpi of a species of Perla, mounted on a slide in the same collection. Its diameter is nearly half as great as the palpal joint itself. Instead of being depressed, the sac in Perla is a little raised, forming a slightly marked, flat tubercle, which is round, slightly ovate, under a 4-10 objective. The surface of the membrane (tympanule of Lespès) is naked. It is strongly probable that this is an olfactory organ, and placed on the under side of the palpi, next to the mouth, so as to enable the insect to select its proper food by its odor, giving an additional sensory function to the palpi of insects. There are no special sense-organs in the antennæ.

Lespès in his note on the auditory sacs, which he says are found in the antennæ of nearly all insects, states that as we have in insects compound eyes, so we have *compound ears.* I might add that in the abdominal appendages of the cockroach we apparently have a *compound nose.* In the palpi of Perla, and the abdominal appendages of Chrysopila the "nose" is simple.

On examination, I have found sense-organs in both pairs of antennæ of *Homarus Americanus*, the Lobster, such as are described by Farre, and also the more rudimentary form of supposed auditory organs in the common spiny Lobster (*Palinurus*) of Key West, Florida.—A. S. P., *Nov.* 30.

Note on the Existence of transversely striated muscular Fibres in Acmæa.—While engaged in the examination of the lingual ribbon of a species of Acmæa (*A.* (*Collisella*) *Bickmorii D.*), brought from Amboyna by Mr. Bickmore, I noticed that, among the fibres adhering to the ribbon, were several longer than the rest and presenting a different appearance. On submitting them to a high power, it was at once evident that this difference in their appearance was due to distinct, well-marked, though exceedingly fine, transverse striæ. The structure of the fibre itself was a simple transparent tube or cylinder with nuclei irregularly disposed at intervals more or less distant. Upon closer examination of other specimens the striated muscles were determined to be the *retractores radulæ*, or the principal, if not the only agents in pulling back the ribbon. They were evidently voluntary muscles acting with considerable rapidity. It was noticeable that, of all the muscles of the buccal mass, these only exhibited striation. They differed from some of the dorsal muscles of a small shrimp (*Palæmon* sp.), in being more finely striated. I have had no opportunity, as yet, of examining other species, and therefore cannot say whether the phenomenon is constant throughout the genus. This is the fourth class of the Mollusca, including the Molluscoidea, in which striated muscular fibre has been shown to exist; it has been demonstrated in *Polyzoa* (*Eschara*) by Milne-Edwards; in *Conchifera* (*Pecten*) by Lebert; in *Ascidia* (*Salpa* and *Appendicularia*) by Eschricht and Moss; and finally in *Gasteropoda* in the present case. — W. H. DALL.

CEDAR BIRD WITH WAXEN APPENDAGES ON THE TAIL. — I have not seen it mentioned in any work, nor do I think that many are aware that the Cedar bird (*Ampelis cedrorum* Baird) is occasionally, though very rarely, found with the tail decorated with those singular wax-like, really horny tips, which it is well known adorn the wings. I have recently been shown a specimen taken in New York State in which the four middle tail-feathers were heavily tipped with this red wax. I have heard of three other cases in which this occurred, though not so strongly developed. I believe that this beautiful ornament, which is never found in immature specimens, does not appear on the wings till the third year. And it is probable that the tail is not so decorated till a much later period. The specimens here mentioned gave evidence of being unusually old birds. — HENRY GILLMAN, *Detroit, Michigan.*

HABITS OF THE RED-HEADED WOODPECKER. — In the spring of 1869 some *Melanerpes erythrocephalus*, began pecking a hole for a nesting place, at about sixty-eight feet from the ground, in the steeple of one of the churches that is situated in our village. One of our citizens, Mr. J. C. Gibson, in order to put a stop to their operations and prevent the farther disfiguration of the edifice, undertook to kill all the birds he saw engaged in pecking at the hole thus commenced; he kept up his deadly assaults upon them until this spring, when his absence from home stopped his attacks upon them; he informs me that he killed in all twenty-two or twenty-three birds that had been engaged in the work; during his absence a pair took possession of the unfinished work, completed the nest, and are now engaged in rearing a brood in it. Is not such persistency of purpose worthy of admiration, notwithstanding it is exhibited by a harmful bird? — L. J. STROOP, *Waxahachie, Ellis county, Texas, August* 24, 1870.

AMERICAN PANTHER. — The Catamount, Cougar, or Indian Devil, as the American Panther (*Felis concolor*) is called, is said to be still common in the wild regions of the Adirondacks. Mr. H. H. Bromley of the Chasm House informs me that dead ones have often been found in the woods, having been killed by the spines of hedge-hogs which they had attacked. — F. W. P.

Notes on Some of the Coast Fishes of Florida. — During a residence of three months in East Florida last winter, I sailed up and down the Halifax, Indian, and Hillsboro' rivers, and enjoyed fine sport with the fishes of that region, many of which I found to be of the first excellence on the table.

Sheepshead (*Sargus ovis* Mitchell). At New Smyrna, near the Musquito Inlet, we caught them in great numbers of two to seven pounds weight. In two hours, at half flood, two of us would often get from twenty to thirty fish, averaging four pounds each; bait, clams or conchs.

Bass, or Red-fish (*Corvina ocellata* Cuv.). This fine fish I found plenty all along the coast about the inlets. They are from two pounds to fifty, as I am informed by fishermen; but the largest taken by me weighed twenty-five pounds, and was caught in the narrows of the Indian River, by trolling with a mullet bait and hand line. At about half flood we caught them by casting a hand line, with mullet bait, far off into the surf, or by fishing with a rod and line where the channel ran near the beach. This fish much resembles the striped bass (*Labrax lineatus*), in habits, and is quite as game a fish on the hook. I had many hooks and many yards of strong bass line taken away by them, as they fight fiercely to the last. This is a very good fish on the table; rich, firm and delicate. Its color is very brilliant when recently taken; steel blue on the back, of a golden copper hue on the sides, and white beneath; scales large; tail square; first and second dorsal with sharp spines; teeth numerous and small in the jaws; large and enamelled on the vomer.

Cavalli or Crevallé (*Lichia Carolina* DeKay). Family of Scombridæ. Shape between that of dolphin and mackerel, though deeper than either; color blue, gold and silver, and changeable like the dolphin; from two pounds to fifteen; goes in schools and takes a bait of mullet eagerly; will also take a red rag or spoon, trailed behind a boat; a very active and strong fish; good eating, though rather dry. Holbrook in his "Fishes of South Carolina," seems to confound this species with the Pampano (*Bothrolæmus Pampanus*), a very highly prized table fish of the southern waters. The latter, I am informed by old fishermen on the Florida coast, never takes a hook, and can only be taken in nets, and at night. It much resembles the Crevallé in appearance.

Sea-trout (*Otolithus Carolinensis* Cuv.). This belongs to the same family as the Weak fish of the New York coast. In shape and color it resembles the lake trout of the Adirondack region, but wants the adipose fin which distinguishes the salmon, and of course is not a true trout. It is an active game fish, takes a mullet bait or clam; weight from two pounds to fifteen; color steel blue on the back and sides, with black spots; under parts, white and silvery; inside of mouth, yellow; head small, teeth strong, tail waved in form, with a double dorsal fin, with spines.

Black Snapper (*Mesoprion pargus* Cuv.). Belongs to the family of Percidæ; is in form like the tautog; a bottom fish, with large mouth and strong teeth; bites eagerly at clam or mullet, and pulls hard; silvery in color when first taken, then turns red, and lastly black; is one of the best of the southern table fishes; weight, from four to sixteen pounds.

Crab-eater, Sergeant fish (*Elacate Atlantica* Cuv.). Family of Scombridæ, or mackerels; found along the shores of the inlets, where it lurks for prey among the mangrove roots; very voracious; takes clams or mullet bait; color, silvery, with a black stripe along the sides; hence its local name of Sergeant fish; the under jaw longer than the upper; weight up to twenty pounds; a good table fish, though inferior to the former.

Whiting or King-fish (*Umbrina alburnus* DeKay). Shaped like a perch, double dorsal with strong spines; color, gray and black above, yellowish white beneath; mouth and teeth small; bottom fish of deep water; takes clam bait; very good table fish; weight, from one to two pounds.

Croker, (*Micropogon undulatus* Cuv.). A southern fish of the perch family; in form, deep like the sheepshead; color, silvery; takes clam bait eagerly; weight, from one to two pounds; a good table fish.

Hog-fish, Sailor's Choice (*Hæmulon fulvomaculatum* Mitchell). Shaped like the last; a good pan fish; weight, from half a pound to a pound; takes clam bait on the bottom.

Cat-fish, of the salt-water (*Galeichthys marinus* DeKay). Handsomer in form and color than the fresh-water cat; has a forked tail and very high dorsal fin; takes fish or clam bait on the bottom; weight, 10 to 15 pounds.

Black trout (*Grystes salmoides* Lacepède). This is a fresh-water fish of the perch family, much resembling in appearance and habits the black bass of the western waters, except that it has a larger head and mouth, and grows to a larger size, say to twelve or fifteen pounds. It takes live bait, spoon or bob, which is a bunch of colored feathers with three hooks concealed among them.

Besides the above fishes, these waters contain blue fish, Spanish mackerel, beluga, mullet, Jew fish, drum, shad, lady fish, porpoise, sharks, saw fish, sting ray, the hawk's bill turtle, the soft-shelled turtle, the green turtle, clams, oysters and crabs, of various kinds. — S. C. CLARKE.

GEOLOGY.

DISCOVERY OF LOWER CARBONIFEROUS FOSSILS ON THE RIO TAPAJOS. — I am just returning from a very interesting and profitable trip up the Rio Tapajos, where I have had the good luck to discover an extensive set of limestones, sandstones, and shales, of lower carboniferous age, from which I have made a very large collection of beautiful fossils. As near as I can ascertain at present, I have at least one hundred and fifty species of Brachiopods, Lamellibranchs, Polyzoons, Gasteropods, Trilobites, fishes, and a few plants, the majority of the species being determinable. Of the Brachiopods I have some magnificently preserved specimens, showing interiors. I am going back to Pará to give up my little steamer and divide up my party. I then return to the Tapajos with a very small party, including a photographer, to examine more carefully,